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ON THE PRACTICABILITY OF CONTRACTING THE EXTENSION
AND GREATLY DIMINISHING THE FATALITY

OF THE

MALIGNANT CHOLERA.

WITH

PRACTICAL REMARKS

UPON

THE MOST SUCCESSFUL PLANS OF TREATMENT

HITHERTO ADOPTED IN THIS COUNTRY.

IN

A LETTER

ADDRESSED TO

THE REV. J. COLLINSON, A. M.

Rector of Gateshead, and Master of St. Edmund's Hospital,

BY

DAVID B. WHITE, M. D.

ONE OF THE PHYSICIANS TO THE GATESHEAD DISPENSARY,
AND LATE PHYSICIAN TO THE GATESHEAD
CHOLERA HOSPITAL.



ILLUSTRATIVE CASES ARE APPENDED.



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TO THE
REV. JOHN COLLINSON, A. M.

RECTOR OF GATESHEAD, AND MASTER OF ST. EDMUND'S
HOSPITAL, PRESIDENT OF THE BOARD OF
HEALTH, GATESHEAD,

AT WHOSE SUGGESTION THIS LETTER WAS WRITTEN,

*As a Token of Regard for his general Character, and of
Respect for his courageous and benevolent Exertions
throughout his Parish, during the late most calamitous
Visitation of Cholera, these few Pages are dedicated, by*

The AUTHOR.

INTRODUCTION.



I HATE writing; for I believe that he who writes much, writes much that is not worth the reading. It is the misfortune of making a book, that the author deems it essential, not only to detail his own original thoughts, but also those of all who may have preceded him. The rolling ball accumulates into an avalanche. A cottage might be raised; but ambition prompts the erection of a palace. The result may be anticipated. For every idea of the author there are three of other people's.

As in an auctioneer's lot, we must purchase the worthless to obtain possession of the only valuable article included. But when the book is obtained, how often do we find to our cost (some ten or twenty shillings perhaps), after searching vainly through its pages, that, like an April-day's present, on unfolding layer after layer, an interminable list, the mighty treasure not worth the unpack-

ing? Should this short dissertation be considered unworthy of approval, there will be few purchasers; and those few will have, at least, the gratification (no ordinary one at the present time, when the press is loaded with compilations) of having only paid what is too trifling to excite their regret. This letter, written at the request of the gentleman to whom it is dedicated, was originally intended to embody a few practical remarks. As I wrote, the subject grew interesting, and expanded beneath my hand, until it became what is now presented to the public. I myself believe it may prove useful, and as such I put it forth.

A LETTER, &c.



DEAR SIR,

I AGREE with you in the utility of a few practical remarks upon the treatment of Cholera; and, as far as my experience will extend, I am most willing to afford it. As our combined object is to be serviceable, I trust you will excuse a few preliminary observations, in my mind highly conducive to that effect. In every town in which an outbreak is anticipated, and there is always a previous period of warning, visiting committees should be formed of active and influential individuals. Be theirs the task to dive into the depths of poverty, to aid the distressed, to comfort the wretched, to warn and reprove the intemperate: food, clothing, blankets, and all those comforts that indigence precludes, should be liberally distributed. It would be too much to expect, and, under all circumstances perhaps, more than were advisable, to recommend the continuance of such

duties during the absolute prevalence of the disease. The hand of charity has, however, been too often paralyzed by the terrors of contagion. What danger may arise amongst the poor, with all their predispositions from exposure to the Cholera, I will not pretend to determine; but of this I am certain, that amongst the class upon which the duties of benevolence must devolve, where the health is good and the mind firm, there is no peril. I have visited the Gateshead hospital during the time I had the honour of being physician to that institution, under all circumstances of physical depression; I have breathed the atmosphere of its apartments for hours together; yet I, the attendants, the nurses, all equally exposed, have equally escaped. Not a single individual in the profession has sustained an attack since the disorder has prevailed.

Medical aid, to have any extensive efficacy, must be employed at the onset. Every additional fact connected with this disease serves the more strongly to enforce the conviction upon me, that, by proper precautionary means, its fatality might be almost totally averted. I consider the extent of its ravages only formidable from neglect. I do not mean to say that many will not perish under every system; but I assert that the list may be greatly diminished. I assert that this power exists chiefly in the medical body. Depots, with proper assistants, should be established, for the mixing up and dispensing of medicines gratuitously. Let the town be divided into dis-

tricts. To each of these let a medical gentleman be appointed. Let him, ere the pestilence has burst forth, by timely visitation amongst the poor whom he has undertaken to superintend, by kindness, by sympathy, by trifling donations to the distressed, establish amongst them a confidence and a character ere the hour of peril shall arrive. It is now he can be most useful by guarding against the prevalence of those premonitory symptoms hereafter to be described, and by enforcing amongst the ignorant and the dissolute the danger of their continuance.

As a proof of the efficacy of this arrangement, I may state, that although, within the district allotted to me, I have prescribed for upwards of a hundred patients labouring under those symptoms above alluded to, which usher in the disease,—and although within its limits ten cases of Cholera have occurred since my superintendence, all of them so preceded,—yet in not one of the above hundred instances did this disorder supervene, and in only four individuals was my assistance a second time required.

In speaking of premonitory symptoms, I may here define what I mean by that term. The first and most general is *Diarrhœa*; the evacuations at the commencement of a dark brown or blackish hue, gradually becoming less and less feculent, until they assume the general appearance of dirty water. Slight cramps, most frequently of the toes, twitchings in the abdomen, with giddiness and sickness, occasionally accompany it. Within

six or seven days after the cessation of such purging, when it abates without the interference of art, I should consider the requisite remedies as imperiously demanded, having witnessed several cases of Cholera occurring during that period. At a more subsequent stage of the irruption, I would call particular attention to a state directly the reverse of this, where no Diarrhœa, but obstinate costiveness prevails. Under these circumstances, purgatives, sometimes of a drastic nature, are resorted to. A favourite medicine of this kind is the Pill Cochiae, a compound of Scammony, Jalap, Calomel, and Aloes. When the bowels are acted upon by these remedies, the dejections (during this time black and horribly offensive) retain their unhealthy qualities. After a longer or a shorter duration of this torpidity of the intestines, the disease suddenly appears.

Experience, in my own practice, bears ample testimony of the danger resulting from neglect under such circumstances; and many a case of Cholera, which has been set down as occurring without any premonitory symptom, would be found, upon a more minute enquiry, to have been preceded in the manner described. Where the formula which I recommend has been adopted, the natural secretions have been speedily restored. When the evacuations have become healthy, I should consider the patient safe, at least until such a time had elapsed as should allow again the irritating matter to accumulate. The change from perfect to diseased action of the bowels is

never so speedy but its stages may be noticed. By due attention to these indications, the necessity having been duly enforced, the whole body of the attendants at the Gateshead hospital escaped; though many of them experienced such symptoms as obviously threatened the disease.

Whenever the Cholera has occurred, I have invariably found that amongst the persons engaged about the patient, or in the immediate neighbourhood, the premonitory symptoms existed. Such localities should be carefully watched, and the opportunity not permitted to escape, of impressing upon the minds of those within its influence, the paramount importance of attending to those warnings already pointed out.

To come, then, to the treatment of those premonitory symptoms. I beg most particularly to enforce the benefit deriveable from washing the whole body with warm water, and afterwards producing a genial glow upon the surface by friction with coarse cloths. I was induced to adopt this plan for two reasons:—First, from the known sympathy between the stomach and bowels and the skin; and, secondly, because I am of opinion that a strong infecting medium exists in the filth allowed to accumulate upon the persons of the poor, their clothes absorbing the noxious exhalations that float around in a contaminated atmosphere, thus presenting to the cutaneous pores, if I may so express myself, a perfect plaster of infection. It has been imagined that the disease has been communicated by the apparel of the pa-

tient. This belief would countenance the supposition I have ventured upon.

Again, in India, where the Cholera is undoubtedly sporadic, it attacks indiscriminately the high and the low ; Grandeur in its palace, Poverty in its hovel. In England, on the contrary, with few exceptions, it has seized only upon the most abject. And why the most abject ? Because, it may be said, they are ill fed, ill clothed, they are frequently intemperate and dissolute in their habits, and they reside in the most filthy and ill-ventilated abodes.

All these causes must undoubtedly contribute to encrease the virulence of this pestilence ; but are they sufficient to account for the total exemption of the more respectable orders from this terrible scourge ? Is intemperance and dissipation confined to the poor ? I have seen the disease in the cleanliest houses ; in the best ventilated situations ; in places from which day's richest light is never intercepted. I have spoken here of light, because I am inclined to think that it possesses a strong disinfecting power. I cannot now enter into an explanation of the reasons that have influenced this conclusion ; but shall merely state, that I have observed the deadliest type, in the darkest dwellings.

What predisposing cause is there then that is not general to all classes of society ? There is one ; one which the forms of civilized communication confines entirely to the lowest grades. I mean filthiness of the person. That this is the only

distinction I will not assert ; but that it is a cause, and a strong one, I feel convinced. It has been urged as an objection, that the Hindoos were the cleanliest race upon earth. True ; but in Hindostan, where the virus is most strong, if we may judge from its effects, it attacks, as before stated, every rank. Here none but the predisposed, the wretched, the intemperate, and the uncleanly. Women, from their sedentary and domestic occupations, rarely exposed to the influence of an invigorating atmosphere, or taking that exercise which the constitution demands, without those acts of cleanliness which man, from his occupations, is necessitated to perform, constitute, as may be premised, the greatest ratio of the infected. For these reasons, and from others drawn from an examination of the general nature of the disease, the defined period of its irruption, its gradual decay, and total cessation, I believe it to be an exotic that will not become indigenous amongst us, but totally wither away.

To enter into a detail of the facts upon this head would be too voluminous for this letter. Nothing but a belief in the utility of the measures recommended, would have forced me into so long a digression ; but I feel assured, that if before and during the prevalence of this calamity, the absolute necessity of ablution, and of cleanliness of apparel, particularly that used next to the skin, and the importance of attending to the state of the bowels, were fully impressed upon the minds of the lower classes, (and I reiterate the assertion,

that with zeal and attention, all this is within the capability of enlightened medical exertion,) many and many a wretch might be saved from a death, perhaps, the most horrible that humanity has witnessed.

Had we been made aware of the nature of the disease, its general rise and progression, such as dreadful experience has conferred upon us, with the munificence, the zeal, and the activity, that has been displayed throughout the town, from our indefatigable chief magistrate downwards, how much modified might have been those dreadful statements, official and non-official, which diffused throughout the land, have scared the stranger from our walls, and carried horror and alarm into every family in the kingdom?

From the exemption of the better classes, it is obvious that the predisposing causes are casual, and not constitutional; and consequently, as I have before stated, within the control of enlightened superintendence.

I have been much gratified by the perusal of an able paper, upon the premonitory symptoms, in the second number of the Cholera Gazette, from the pen of Dr. M'Cann; with every word of which I perfectly coincide.

If after these warnings, in any place where a proper municipal authority is established, the Cholera should burst forth with unabated violence, I should at once consider that there had been some direliction of duty. The blood of the sufferers will rise in judgment against the apathy, the igno-

rance, and the cruel neglect, of those who should have been, at so awful a crisis, their natural protectors.

Having thus smoothed the way, I shall enter at once into the treatment of those symptoms so repeatedly alluded to, under the name of premonitory ; the Diarrhœa ; and at a more subsequent stage of the disease, the Costiveness. I order my patients, when they retire to bed, the lavation and rubbing, above referred to ; afterwards the pediluvian, and a pill composed of Calomel prep. gr. vi. Opii crude gr. i. ; to be followed, in the morning, by a dose of Castor Oil, with a few drops of laudanum ; or, what is probably better under ordinary circumstances, a powder consisting of Pulv. Rhei half a dram, Zingib pulv. gr. viii. This simple formula I may have to repeat ; but I never knew it to fail. I may here observe, that the doses of medicine prescribed, are proportioned to the adults. Blood letting, during this period, has been practised ; but I cannot offer an opinion upon the practice, for this plain reason, that I have never had occasion to resort to its use.

When the disease has proceeded beyond this point ; when the cramps are strong, the sickness considerable ; when great pain and a sense of weight are experienced at the præcordia, with restlessness and urgent thirst ; when the evacuations are slightly feculent, or like barley-gruel ; and yet the pulse retains its firmness, or is at least but slightly depressed ; I should designate this the first stage of true Cholera.

I would divide then this formidable disease into three heads:—First, the one just described; when the pulse is moderate, and the voice unchanged. Secondly, when the pulse is scarcely, if at all, perceptible; the voice totally changed in its tone, or reduced into a whisper; the fingers and toes corrugated; the countenance cadaverous; and occasionally the skin more or less blue. Thirdly, when, reaction having been fully established, the Consecutive Fever has supervened.

Treatment in the First Stage.

From the result of my own experience I should infer that blood letting has been too universally recommended. Great discrimination should be employed in its use; as I have seen the collapse hurried on, and the pulse sink from a moderate fulness to imperceptibility, upon the abstraction of even a few ounces of this fluid. From those whose constitutions have been impaired by previous excesses, who have been exposed to the contingencies of poverty, ill fed, ill clothed, blood should never be drawn. When the habit is sound and vigorous; when the cramps are violent; when oppressive feelings of weight and uneasiness are experienced about the præcordia, accompanied with tossings and restlessness; when the breathing is quick and laborious, the pulse not vibrating, tremulous, and uncertain, but firm and continuous; when the heart seems oppressed by the impeded circulation; then perhaps may the remedy

be used with advantage: but it must always be done with caution, a finger on the wrist. When blood can be drawn with safety; when the pulse beat retains its force, or rises during the operation, let it flow on, for it must be of service; continue until the urgency of the symptoms abate: I have known ease produced, ere a tea-cupful has been taken. When the artery vacillates, trembles, and feels wiry to the touch; when it is hard, yet easy of compression; when, in short, vascular debility is apparent, I would never employ the lancet. When the pulse falls in raising the patient from the recumbent position, the inference must be obvious.

In irritable habits, under the favourable circumstances specified, when great mental excitement prevailed, I have found Venesection an admirable sedative, producing tranquillity, and allaying those terrors which tend to encrease the danger of the malady. Soothing language should, in such cases, be used, and not a word uttered that were calculated to excite alarm. I cannot sufficiently reprobate the barbarous practice of carrying on a professional conversation, containing personal and intelligible allusions, over the bed of the agonized patient. Weak cordials should be occasionally administered.

When called, therefore, to see a patient during this stage, what is to be done? When blood-letting is indicated, let blood at once be drawn. When the sickness is violent, and any irritating substance seems to remain within the stomach, an

Emetic should be given immediately. A combination of two or three tea-spoons full of Mustard powder and two table-spoons full of common Salt, dissolved in warm water, is very effective. The Mustard alone is generally employed; but I have observed it produce great irritation, which has remained for some time. The Salt renders it more instantaneous in its action. When the effect has ceased, commence with the following powder: Calomel præp. gr. xiv. Opii gr. i. ss. Three or four grains of Calomel may be ordered every two or three hours after; and if the cramps, pains, or sickness should continue, a quarter of a grain of Opium may be added. Injections of three or four pints of warm water, with or without Laudanum, according to the indications, should be as frequently thrown into the rectum with a forcing syringe, and restrained there, if necessary, by mechanical means. When the Enema returns slightly tinged with feculent matter, a warm solution of common Salt may be advantageously injected. Small doses of Rhubarb and Ginger, at intervals, are serviceable in directing to the bowels. To allay the vomiting, cupping over the Epigastrium, and afterwards the application of a Blister or a Sinapism, with effervescent draughts containing a few drops of Tinct. Opii, are the chief resources.

I have witnessed great reluctance to the administration of cold water, when the thirst has been excruciating. I have always allowed it, in general slightly coloured with Brandy, both in this stage

and the succeeding one of collapse, and never saw ill effects result from the indulgence. I sincerely trust this prejudice will yield; for I have never seen gratification more intense than when this desire has been complied with. Nature's instinctive voice demands it, and Science every day discovers how seldom she demands in vain.

Hot bottles and flannels should be placed at the extremities, and bags of warm sand down the thighs and spine, when a feeling of chillness prevails at these parts. As the evacuations begin to be restored, the dangerous symptoms abate. The Calomel may now be ordered in diminished doses, and at longer intervals.

I have experienced no efficacy from the vapour bath, and nothing but disappointment from the administration of stimulants. As cordials, they are most useful. I have been in the habit, however, of prescribing the Carbonate of Ammonia, in doses of 10 grs. frequently repeated, during the stage of Asphyxia, or when I have anticipated its approach. It has proved beneficial. For the spasms, friction should be incessantly employed.

I consider cupping, where it can be used, as superior to leeches: there is less exposure and less delay. The application of the glasses alone, when the sickness and pain about the Epigastrium is considerable, will frequently afford relief. Amongst the poor, when the instrument is not at hand, an inverted tumbler makes an admirable substitute.

I cannot speak too highly of the large injections of warm water. They should be frequently repeated. I have known the general uneasiness, pain, and occasionally the sickness, vanish upon its use, ere the instrument has been withdrawn. The practitioner will find the sickness, during the whole of the attack, the most obstinate affection to overcome. Should the disease now abate, a slight degree of Fever occasionally follows, which the common mixture of Rhubarb and Magnesia is well calculated to subdue.

Should this favourable conclusion not result, the pulse sinks, the voice becomes changed, and the patient gradually merges into the second or

Collapsed Stage,

During which I know nothing preferable to the Calomel and Opium, and the warm injections. Mutton broth, or gruel, should be thrown into the intestines, and the precautions adopted, that have been before alluded to: Brandy, Port Wine, &c. have been also used, where the irritation of the stomach prevented the administration by the mouth. I have tried the Spirit of Turpentine; but cannot speak highly of its merits. Great stress has been laid, by many gentlemen, upon the benefit derived from exciting the system by Mustard Emetics, and withdrawing blood whilst the excitement continued. Respecting the Mustard Emetics, it is with me of doubtful efficacy; I

have seen the slight remains of vitality at once exhausted by its effects. It is but fair, however, to add, that with some of our most scientific and successful practitioners, it has formed a favourite remedy.

I have never seen a case in the collapsed stage in which emetics, of any kind, were indubitably serviceable; though I have witnessed some, in which they were incontrovertibly mischievous. When the powers of vitality are sufficiently strong to generate reaction, the Mustard may hasten that favourable crisis, which would, I imagine, have ultimately occurred without its use; but where death may take place from the slightest effort, where the thread of life has been drawn out to the finest film, how dangerous must be the experiment! depression must ensue. When this energy is wanting, all stimulants act alike, whether Brandy, Æther, Opium, or Oxygen Gas; the pulse is excited for a moment, only to sink, if it be possible, the deeper afterwards.

The beneficial operations of nature are too often ascribed to the efficacy of a favourite antidote. This is one of the greatest evils of our profession. This it is, that swells our list of drugs, and confers upon inert, and too often injurious medicines, a fictitious reputation. This it is, that produces, too often, that improper interference, which has rendered it a matter of philosophical speculation, how far mankind may have hitherto been benefited by the labours of those, whose pretensions were to heal.

Of the venesection, when the blood has flowed, I have regarded such flowing merely as a test of that reaction of which, uninfluenced by the remedy, it served but as the indication.

I have found the simplest, the most successful treatment:—the Calomel and Opium, the Carbonate of Ammonia, warm injections, stimulants as cordials, friction where necessary, and warmth, especially of a dry kind; worsted stockings filled with hot sand, as I learnt from the practice of Mr. Knaggs of Gateshead, is admirably adapted for this purpose.

To allay the vomiting, as in the former instance, effervescent draughts, &c. should be used. A most salutary and speedy application, is by laying over the stomach pledgets of linen, dipped in boiling water. Whatever may be the plan adopted, all unnecessary disturbance to the patient should be avoided. The death-bed is often rendered more agonizing by the mistaken, but well-intentioned, zeal, the benevolent officiousness, of inexperienced practitioners. An enema, consisting of a warm infusion of Tobacco, half a dram to a pint, has been recommended by Mr. Baird. I have seen recovery in two apparently hopeless cases, in which this remedy had been employed.

When the Cholera first appears in a certain locality, its malignancy is frightful: almost all the attacked, perish. As it proceeds in its course, its severity diminishes, until it arrives within the control of professional exertion. This is the period when specifics are put forth, which, perhaps,

retain their fame, until further trial, in newly exposed situations, demonstrate their inutility. When my friend, Dr. M'Whirter, and myself, were called to the first instance that occurred within the precincts of this town, we adopted, without any effect, that treatment, which at a later and more propitious time, was found so beneficial. The particulars, as being of interest, are detailed in the Appendix.

Prior to death, when it takes place during this stage, the disease sometimes assumes a form, well calculated to deceive those not acquainted with its character. The pulse rises, the skin becomes warm and covered with perspiration, the patient expresses his relief, and, perhaps, his full anticipation of recovery: in an hour or two all is over. The blueness, so peculiar to this disease in other countries, has not been, by any means, a general characteristic in this. In not one instance in ten, has it assumed that form. The skin of the hands and face often become of a brownish hue. In the most deadly form of Cholera, there is a tone of voice, a wail, which once heard, can never be mistaken; to him, upon whose ear it has fallen in the accents of anguish, it can never be forgotten; I have always found it the certain prognostic of death.

In many instances, after a continuation more or less long of the premonitory symptoms, and occasionally almost without any previous intimation, the patient sinks at once into a state of Collapse. I have known them fall, and, within a

few minutes, become totally pulseless. This has been at the commencement of the irruption.

To resume my remarks, which the general observations just detailed have somewhat interrupted. When the stage of Asphyxia has had a favourable termination, and passed into reaction, the pulse gradually increases; the mouth becomes parched; the skin hot; pains are felt in the head, chest, back, or loins, perhaps in all; and we now find, that, in a milder or more marked degree, what I have designated the third stage, or

Consecutive Fever,

Has set in. The tongue, throughout, is most frequently moist, and sometimes coated. In general, however, as was observed by Mr. Glenton, it presents a red appearance, similar to what is seen in Eruptive Fevers. Sometimes the redness is confined to the tip and edges. This is the time at which, in my opinion, the lancet may be most advantageously used. With proper precautions, we may bleed, and, by bleeding, control the violence of the attack. When obstinate sickness, attended with the discharge of a greenish matter from the stomach, prevails, I have seen great benefit derived from an emetic of common Salt; the dose to be repeated until nothing but the solution is rejected.

As a common form of Fever now presents itself, such as is familiar to every medical gentleman, I shall content myself by drawing his

attention to the most prominent feature of this type of the disease,—the peculiar determination to the head. To this point must his vigilance be directed; as the progress is most insidious, and the tendency most fatal. It is the opinion of a highly scientific surgeon of this town, founded on a most extensive experience, that the Consecutive Fever is commensurate with the duration and severity of the Collapse. This conclusion is doubtless, in a general sense, correct, but not minutely so; for I have observed the mildest case precede a dangerous Fever, and one of the severest recover almost without any Fever at all. My talented and indefatigable friend, Mr. Knaggs, has furnished me with a case, which I also myself saw. It is most interesting, and has been subjoined.

I cannot adequately express my obligations to Mr. Scott, late surgeon to the Cholera hospital, Gateshead, for his valuable assistance, and for many important hints scattered throughout this letter. His excellent practice, during the time he superintended the above establishment, rendered the duty of a physician almost honorary.

In conclusion, I must apologize for the length of these details. I have, however, made conciseness my object, and studied more the condensation of the matter than the elegancies of the style.

I am, Sir, most respectfully,

Your obedient servant,

DAVID B. WHITE.

136, *Pilgrim Street, Newcastle upon Tyne,*
February 6, 1832.

A P P E N D I X.

CASE I.

Premonitory Symptoms.

ON the 15th of January, had occasion to enter the house of John Harley, aged 43, resident on the Ballast Hills, to see his child, then ill of Cholera. I observed something peculiar in the appearance of the man, and remarked it to Mr. Scott, who was along with me. There was a hilarity, an alertness, accompanied with a wildness of eye, and anxiety of countenance, which I in some measure ascribed to drink (though in this I may have been mistaken), and to the over-excited feelings of a father. I had given a favourable opinion of my little patient. I enquired if he were well. He said he was, but that he had had a purging, which had ceased for two or three days. The next morning, at 10, was called to him. He had been attacked at 2 A. M., and then presented the disease in its most malignant form. He died in a few hours afterwards.

Remark.

It was my intention to have ordered, in this instance, my usual remedies; but from some neglect, in the confusion of the business of my district, it was forgotten. I trust, however, it will serve as a caution to others, as it did to me.

CASE II.

Cholera in its mildest Form.

Mrs. A., Ballast Hills, aged 53. First saw her on January 15. She had been costive for a fortnight, and had taken some purging pills. These brought away some dark brown dejections, which gradually became less feculant, until they assumed the appearance of rice-water. At my visit, she had great pain in the Epigastric and Lumbar regions; severe cramps of the legs, feet, and hands; great thirst; sickness, with slight vomiting; and a quick, vacillating pulse.

R. Calomel p. gr. iv. Opii gr. i. to be taken immediately.

R. Calomel p. gr. iii. Opii crude gr. $\frac{1}{4}$ ft Pil. every three hours.

R. Pulv. Rhei $\frac{1}{2}$ dram, Pulv. Zingib gr. viii. ft Pulv. in two hours after the first pill.

Ordered the administration of an Enema, with 3 pounds of water warm as could be borne, to be repeated every two hours. Expressed great relief. On the 16th, evacuations becoming natural; had felt some pains in the stomach during the night, which yielded to the application of hot plates and bags of heated sand. Continue the medicines. Some slight degree of Fever afterwards, which speedily yielded to the usual remedies.

Remark.

This is the form, which towards the termination of the irruption, in three cases out of four, the disease assumes. The plan here adopted, with occasionally gently stimulating cordials, soon places our patient beyond the reach of danger. I would seldom recommend Calomel, without a small proportion of Opium. The eighth of a grain will counteract the irritation of the Mercury.

CASE III.

In a more severe Form.

Mrs. Hall, aged 26, Ballast Hills. Saw her on the 18th January. Had been purged for a week previously. The evacuations, as in the preceding case, had gradually become characteristic. I found her labouring under violent cramps of the extremities, twitchings of the abdominal muscles, pain in the epigastrium and back, corrugated fingers, countenance so much altered that she looked more like 46 than 26, excessive vomiting, purging of watery fluid with flocculi, great thirst, excessive debility, and a weak, tremulous, and unsteady pulse.

R. Calomel p. gr. xviii. Opii crude gr. ii. to be taken immediately; with the following powder, R. Rhei pulv. half a dram, Zingib pulv. gr. viii. R. Calomel p. gr. iii. Opii gr. $\frac{1}{4}$ ft. pil. every hour. Sinapisms to the stomach and calves of the legs. Warm water enemas every two hours, and heat applied to the extremities and surface.

19th. Still vomiting, great thirst, pulse more steady, no cramps. Continue the medicines and the sinapisms, with an effervescent mixture, every three hours.

20th. Greatly improved, vomiting ceased, dejections become feculant, pulse full, bounding, 100; great thirst, complains of pain in head and back, heat of skin, and a sensation of burning in the palms of the hands and soles of the feet. V. S. ad oz. xviii. Cont. Med. without Opium. This patient was much relieved by the bleeding, and recovered very quickly.

Remark.

The efficaciousness of cautious blood-letting at this period, when the fever is about to ensue, is here demonstrated. The pulse retained a considerable degree of firmness after the operation.

CASE IV.

A malignant Form.

William Wilkinson, Ballast Hills, aged 29, a carter in the Alkali works of Mr. Anthony Clapham. A short time before, discharged from the Newcastle Infirmary; consequently much debilitated. I was sent for, and saw him at 8 A. M. of Monday the 8th of January. He had been costive for a week before, and had taken a dose of Castor Oil, which had produced a dark and fetid dejection. On Sunday the 8th, at 9 P. M., was attacked with purging of a common kind; and at half past 4 A. M. of the following day, sickness and vomiting came on. I found him with a pulse almost imperceptible, cold extremities, excessive cramps, pain and weight of Præcordia, and a feeling, as he described himself, of being all drawn up; great thirst, and continual demand for cold water. The sickness and vomiting still continued. There was corrugation of the fingers; but, owing to the nature of his employment, from the dirt upon his hands and face, it was impossible to distinguish the natural colour of his skin. The voice altered from its usual tone. He had passed pellucid evacuations. Administered a Mustard emetic, which produced copious discharge from the stomach of a perfectly transparent fluid. A Mustard poultice over the Epigastrium, and an Enema of 4 pints of warm water, with 2 drams of Tincture of Opium. Calomel præp. gr. xv. Opii crude gr. ss. ft Pilul. iii. to be taken immediately. Remained with him an hour and half, and ordered him Calomel gr. iii. Opii gr. $\frac{1}{4}$, every two hours. The injection without the Opium every hour, and a weak mixture of brandy and water to relieve the urgent thirst. Worsted stockings filled with hot sand, procured from the neighboring glass-house, were applied down the spine, thighs, and at the extremities.

At 12 A. M. saw him again, in company with Dr. Chawner of Newark, and Mr. Knaggs. Greatly altered for the

worse ; pulse extinct, voice sunk to a whisper, cold clammy skin, cold wrists, chilly exudation, breathing quick and laboured. Mr. Knaggs attempted to draw blood, but, with every effort, could only procure about an ounce. We all coincided in considering this case a hopeless one. Calomel gr. iv. Opii gr. i. every hour. Brandy and water, and 10 grain doses of Carbonate of Ammonia, to be frequently administered. At 4 P. M., much the same. At 11, slight reaction ; pulse plainly perceptible. Powders and Enemas continued. Mustard poultice to stomach and legs. Vomiting still violent.

Left him at 1 A. M. of Tuesday, obviously better, under the superintendence of Dr. Chawner, who was so kind as to stay with him for some time longer. 12 A. M., in company with my distinguished friend, Dr. Baird of Liverpool ; full reaction, pulse 96 and moderately firm, complains of pain at the Præcordia and loins, with incessant vomiting. Cupped over the stomach, and a Mustard poultice afterwards applied. Calomel gr. iv. Opium gr. $\frac{1}{8}$, every hour. A slightly feculant tinge and odour being now perceptible in the returned Enemas, a little common Salt was added ; to be repeated every two hours. Pulv. Rhei dr. ss. Zingib pulv. gr. viii. to be taken immediately ; and an effervescent mixture, containing 40 drops of Laudanum, were prescribed. 8 P. M., vomiting a green fluid, and the injections evidently bringing away stercoraceous matter ; pulse firm. Calomel præp. gr. iii. every three hours, and Cont. Med. Wednesday, A. M. the peculiar vomiting still continued ; evacuations becoming natural, pulse firm. A blister over the pit of the stomach. An emetic of Salt and water given, and repeated until the solution alone was returned ; Cont. Med. Thursday, A. M., doing well, the vomiting has ceased. P. M., Pulse hard and strong ; complains of pain in the head and ringing in the ears ; turgescence of the eyes. Hair cut close, and cold applications. V. S. ad oz. xx. Pulse still firm ; empl. Lyttæ to the neck ; Cont. Med. without the Tincture of Opium ; twelve

leeches to the head; Rhubarb and Ginger occasionally. Friday, A. M., much better; leeches repeated; Cont. Med. I may merely observe further, that the Fever required the most attentive watching. Leeches were almost daily applied to the head for some time; and it was long before the patient could be declared out of danger. As the Febrile symptoms subsided, a slight Ptyalism came on.

Remark.

This was to me an intensely interesting case. The pulse, before and during the administration of the Mustard emetic, plainly perceptible, though weak, became shortly afterwards extinct. I do not, from this fact, at once draw the inference that such sinking resulted from the employment of this remedy; but I urge attention to it as a proof that, even in a case where the power of reaction existed, it was at least inefficacious. Nature would seem to demand a period of repose, to gather strength for the contest that awaits her. Every excitement, that is not permanent in its effects, appears to be injurious, as exhausting that power so necessary to reaction. That energy, so effective when concentrated, is wasted in divided efforts. When we attempted to draw blood, none would flow. If the crisis had been near, and the operation had succeeded, relief and recovery might have followed, and another fallacious proof perhaps have been presented to us, of the benefit of blood-letting. Of the Fever that resulted, the determination to the head was most striking. A few hours sometimes produced symptoms requiring the most energetic treatment. When Wilkinson became, according to his own expression, quite well, there was an appearance about his eye that intimated the necessity of medical superintendence.

CASE V.

Malignant Cholera, in its worst Form.

(FROM THE NOTES OF MR. PARR, SURGEON.)

Oswald Reay, aged 52, New Road. Was called to see him, for the first time, at 3 o'clock P. M. of the 27th of October. He was of temperate habits, and had been complaining for two or three days, but still continued at his work, until the evening before; when, at about half past 11, after retiring to rest, he was seized with an attack of purging, of a common kind. Between the hours of 2 and 3, A. M. of 27th, spasms came on. He received no medical assistance until I saw him, as above described. I found him pulseless, cold and clammy surface, tongue loaded, but moist. Breath cold, skin blue, fingers corrugated, intense thirst, calling incessantly for cold water, which was rejected as soon as taken; voice reduced to a whisper, and countenance most anxious. He had passed a large quantity of colourless fluid, which had streamed through the mattrass upon the floor. The vomiting was of the same kind. My impression was, that the case was one of extreme danger, and having never witnessed symptoms of a similar kind, I immediately sent an urgent message for Dr. M'Whirter, or Dr. White.

In the mean time I attempted to administer a pill, containing Colomel gr. viii. Opium gr. i. which he could not swallow; I, therefore, dissolved it, and gave it to him in that form, washed down with a little brandy and water, which he retained for upwards of a quarter of an hour. During the whole of this time, the cramps were most violent. Friction, and extension of the feet and legs, produced relief. Warm applications were applied to the whole of his body: frictions to be persevered in.

I now left him for an hour, and on my return Dr. White was with him. At his suggestion, the Calomel and Opium were continued; and a mixture, containing Carbonate of

Ammonia, was administered. Additional clothing was laid upon the bed. At 7, P. M. Dr. M'Whirter arrived. In consultation with Dr. White, Æther, Laudanum, and an anodyne Enema, were ordered. Subsequent to his taking the Calomel and Opium, a rice-water dejection was passed. From the appearance of this evacuation, Dr. M'Whirter declared it as his opinion, that the disease was the Malignant Cholera. The patient expressed himself relieved by the remedies employed.

Dr. M'Whirter saw him again at half past 8, and remained with him till half past 9. Still the same, no reaction, the vomiting and purging had not returned. At half past 11, P. M. I saw him again, in company with Dr. White. His eyes were now glazed, and he was obviously dying. I raised his head from the pillow, and gave him a little cold water. His faculties were unimpaired, and his whole surface warm, with the exception of his ancles and wrists. He continued to sink, and expired at half past 4 A. M. of the 28th, 29 hours after the commencement of the attack. Not a drop of urine was passed from the first.

Remark.

I have subjoined this case, as presenting an admirable specimen of the worst form that the disease assumes in this country; independent of which, I considered it would be interesting, as being the first instance, by a month, that occurred in Newcastle. Reay was attacked on the 26th of October; and Jordan, the second case, on the 26th of November.

The voice was here of that peculiar kind to which I have alluded in my letter. To attempt a description of it would be useless. In a man of the name of Taylor, who presented the Cholera in its most horrible form I ever witnessed, the tone of the voice, as in the torture of the spasms he called for assistance, was appalling. The actual cautery, which was dexterously applied down each side of the spine, without the slightest relief to his sufferings, pro-

duced screams of agony so unearthly as to excite a feeling of horror in every one who heard them.

CASE VI.

(FROM THE NOTES OF MR. DAVISON, SURGEON, SALLY PORT GATE.)

At 11 P. M., Tuesday 6th December, was called to the Sandgate, to see a Mrs. E., aged 57, of most intemperate habits. She had been intoxicated for three days, and was so, in fact, at the time of the attack. She had returned home in that state at half past 5 o'clock. She remained a short time, and then complained of great pain in the stomach, which was shortly followed by vomiting and purging, neither of which evacuations were seen. She also suffered from spasms in the legs. The daughter now arrived, and observed a remarkable difference in her mother's appearance, looking pale, and much older than natural. At 11 o'clock, when I arrived, I found her in bed. The vomiting, purging, and spasms, had continued up to that time. She had a cold skin, pulse imperceptible, tongue furred, but not cold; great thirst and jactitation. She complained of pain in the abdomen. At 11 o'clock A. M., Dr. White was sent for, and found her in the same state. Her evacuations were liquid, of a feculant odour, containing flocculi, and presented an appearance of muddy small beer. She felt an incessant inclination to void her urine, but had hitherto been unable to do so. At this time, the utensil was given her; and, according to her own statement, a small quantity was passed, which was mingled with the evacuation by stool. She spoke in a moaning tone, but not in a whisper, and begged urgently for cold drink. At Dr. White's suggestion, Calomel and Opium were given; and various stimulants, hitherto employed, as *Æther*, Opium, Brandy, were persevered in, without producing the slightest reaction. She continued to sink, and expired at half past 5 P. M.

Remark.

I have presented this outline of a case, as it affords an admirable proof of the inutility of stimulants. At the time it occurred, my experience of the disease had been limited, and I had formed an erroneous estimate of this class of remedies. She was not sober at my first visit, nor did she ever become so during the period of the attack. It was strange that this effect upon the brain should exist under such circumstances, and that that organ should be thus partially excited without the smallest accompanying arterial action being perceptible. The trial was decisive. In the case of Taylor, spoken of in my last remarks, six ounces of the Spirit of Turpentine were taken at a dose, without the smallest apparent effect.

CASE VII.

James T., a hardy man, aged 36, of intemperate habits, kept a horse and cart, with which he led coals. Was attacked with a watery purging at 2 A. M. of December 28; got up at 4, took half a glass of Brandy, went to the pit, and returned about 11; the purging getting worse, another half glass of Brandy; again went to the pit, where he fell; and at half past 4 P. M. was brought home. At 5, I was called to him, and found him sitting upon a chair, his body drawn forward, and his head sunk upon his breast; no pulse, nose cold, breath and tongue cold, violent cramps of extremities, great pain of the Epigastrium and back, every portion of the surface of a deathly, cold, and spongy feel, great thirst, severe vomiting, spasms of the abdominal muscles, and at each spasm a semi-transparent fluid was thrown with convulsive force from the rectum; from a naturally powerful voice, it had fallen into a whisper. He was undressed and put to bed. After the application of bottles of hot water to the extremities and sides, warmth to the surface, friction, the administration of large warm injections, with Calomel and Opium, and

the Carbonate of Ammonia, for 3 hours, reaction began to appear, and in another seemed fully established. His pulse was strong, and 95; skin warm, with a gentle moisture on the surface. He expressed himself as burning, and requested some of the cloaths to be taken from the bed. At this time, a vein was opened, and 10 ounces of dark tarry-looking blood was extracted. Shortly afterwards, the pulse became wavering and unsteady, alternately extinct and distinct in each wrist for about a quarter of an hour, when it became imperceptible, and I never could feel it again. I continued to use means to promote reaction without effect. He died in the most terrible paroxysm of spasm at half past 3 A. M. of the 29th.

Remark.

I shall not add any observations upon this case. I wish I could say it was the only instance within my knowledge of the injury resulting, in this stage of the disease, from the practice of blood-letting.

CASE VIII.

Elizabeth Chambers, aged 21, Ballast Hills, a fine young married female, of previous good health, and temperate habits. I was called to see her, for the first time, at 1 A. M. of Monday, the 2d January. She had had Diarrhœa from 3 P. M. of the day preceding, but continued her ordinary domestic duties until about 9, when sickness and debility coming on, she retired to bed. At about 12 o'clock, the spasms, which up to that period had been moderate, became more violent. Some Brandy and Water was given to her, but it was immediately rejected. When I arrived, I found her with a pulse plainly perceptible, skin moderately warm, intense vomiting and sickness, and urgent thirst; she complained of pain over the region of the stomach; and her voice was reduced to a whisper. A Mustard Emetic was immediately exhibited, and the pulse

rose slightly under the influence of its operation; a large warm injection, containing a dram and half of Laudanum, was thrown into the bowels; a pill, containing Calomel gr. x. Opii gr. ss. was now given, but it was immediately thrown up again: after a little time the dose was repeated, and remained. Warm flannels and hot bottles were applied to the extremities, and hot plates, which afforded relief, were laid upon the stomach. In about a quarter of an hour, from the administration of the emetic, she turned her face to the wall. After she had remained in that position for a short time, I placed my finger upon her wrist, and to my horror and surprise, I found that it was cold, and the pulse extinct. Brandy and Water, with Ammonia, had no effect; every remedy seemed valueless; in twenty minutes more, articulation, which, though low, had been hitherto distinct, had entirely failed; when I asked her how she felt, she attempted to utter, but could not succeed; she continued to sink, and at about half past 5 A. M. of January 3d, she quietly expired. She never experienced the spasms after the mustard had been employed.

Remarks.

What observations are applicable here? At 1 o'clock, I administer to a stout young woman a Mustard Emetic; the symptoms at that time, are most decidedly not such, as indicate a speedily fatal result; in twenty minutes after the operation, all hope seems gone. Yet in the next case which I present upon my list, an intemperate man, R. G. the remedy is given, and operates effectually, whilst the patient is in a state of perfect Asphyxia; and yet he recovers. There are many instances in which it would appear to raise, and permanently establish a pulse, whilst in this it abruptly extinguished it. What scientific regulation is there then for the administration of this emetic? We have no means of absolutely estimating the latent capacity of vitality. I coin an expression for the purpose. There is occasionally a hidden weakness, or a concealed strength, at

least not evidenced by external indications known to us. Until these distinctions are fairly laid down ; until the states of real and apparent debility are defined, our practice must be experimental, and should consequently be most guarded.

CASE IX.

(FROM THE REPORT OF MR. KNAGGS, SURGEON, OF GATES-HEAD.)

R. G., aged 53, South Shore, of intemperate habits. On the 26th of December, at 11 P. M., he had fallen down in a state of Asphyxia. Being in the immediate neighbourhood, I was speedily upon the spot. Had had a previous purging for several days ; but it had ceased for 12 hours before the attack. I found him in the state just described, and the floor was streaming with a fluid which he had ejected from his stomach. He was placed in bed, and vomiting immediately produced by a Mustard Emetic : Opium, Calomel, Ammonia, and Brandy, were afterwards given. Mustard Poultices were applied along the whole course of the spine. Notwithstanding these remedies, there was no pulse at 12 o'clock. Mr. Hosegood's assistant accompanied me in my visits to this patient.

At 3 A. M. of 27th, visited him again, and to my astonishment, found that reaction had come on ; pulse perceptible ; cramps, although they had been most violent, now much less so. I then bled him, but could not procure more than 3 ounces. Continued the Calomel, Ammonia, and Brandy, with occasional doses of Rhubarb. This treatment was kept up, with now and then a little Castor Oil and effervescent draughts. Very trifling fever supervened ; for on the second day the man was perfectly well, and out in a short time.

I may mention, that in the collapsed stage, heated sand was applied, in worsted stockings, to all parts of the body. He had passed the characteristic evacuations, which re-

mained in the utensil, and was shown to Dr. White, when he saw the patient on the day subsequent to the attack.

Remarks.

That the fever is not commensurate with the severity of the collapse, this case affords an admirable illustration. Stimulants were also freely given, without producing any serious disturbance to the system. The habit of the individual may have had some influence in the latter exemption. Duration, rather than severity, as has been before observed, seems the most exciting cause.

CASE X.

Matthew Allen, aged 20, a strong blacksmith. He had only arrived in Gateshead, from Corbridge, on Friday the 6th. He was then perfectly well; but, at 8 A. M. of the 7th, was attacked with purging. At 7 P. M., vomiting, with severe pain in the stomach and bowels, came on. He described the evacuations as watery. At 1 A. M. of the 8th, had violent cramps of the legs and thighs, for which some domestic remedies were resorted to without effect. I saw him for the first time at 11 A. M. of the same day. At that time, the cramps in the extremities were severe; no pulse at wrist; surface cold and clammy; corrugated fingers; excruciating pains in Epigastric and Lumbar regions; cold tongue and breath; voice weak. R. Cal. gr. xv. Opii gr. ss. to be given immediately, and warmth applied generally. An Enema of 3 lb. of warm water and $1\frac{1}{2}$ drams of Laudanum, immediately injected. Dry cupping over the Epigastrium, without any relief. 20 minutes to 1 P. M., no pulse; still cold; vomiting; when any stimulant was employed, the pulse became perceptible for a short time; but this effect was the more difficult to produce, the later it was continued. No remedy produced any permanent result. Ease was, however, obtained; and at 1 P. M. he requested permission to smoke his pipe,

which seemed to afford him pleasure. This he repeated at various intervals, leaning upon his elbow in the bed; for the last time at 6 P. M. He had been gradually growing weaker and weaker, and at 9 expired with perfect tranquillity.

Remark.

The pulse slightly beating, under the administration of stimulants; and the ease, the comparative heaven (in this instance the expression adopted by the man himself) that preceded death, are strongly characteristic of a certain form of the disease.

In selecting these few illustrative cases, I have chosen such as seemed to me most instructive. I wish I could have added a few more; but as this dissertation has already crept far beyond the limits I had intended, and as I am anxious to be concise, I shall confine myself to these. I would call attention to the variety and constancy of the premonitory symptoms developed in these cases. Here are the Diarrhœa, the natural cessation of the Diarrhœa, and the Costiveness, so particularly pointed out in my Letter. This fact was not observed until these instances had been arranged for other purposes of elucidation; and I present it as a gratifying test of the truth of the observations referred to.